

REMARKS

Applicants thanks the Examiner for the telephonic interview with the undersigned on September 9, 2003. The telephonic interview was helpful in advancing prosecution of this matter, particularly with respect to claims 173-193.

Claims 19, 21, 81, 118-120, 133, 156, 161-168, and 196 have been cancelled. Claim 13 has been amended to incorporate the subject matter of dependent claims 19, 21, and 196. Further support for the amendments to claim 13 is found throughout the specification, illustratively page 13, line 19 to page 14, line 13. Claims 16-18, 22, 24-27, and 31-32 have been amended for consistency with claim 13. Claims 33, 55, 82, 87, 121, 122, 128, 145, 147, 152 have been amended similarly to claim 13. Claims 129-131, 136-139, and 143-144 have been amended for consistency with their base claim. Claim 79 has been amended to incorporate subject matter from dependent claims 80-81. Claim 80 has been amended consistent with the amendments to claim 79. Claims 163 and 173 have been amended for clarification purposes, with no reduction of scope intended. Claims 169-172 have been amended to depend from claim 55, rather than cancelled claim 168. New claim 197 is directed to the subject matter of previously cancelled claim 159.

The Examiner has objected to the title because systems and devices are both claimed and the title only recites systems. The title has been amended accordingly.

Claims 173-193 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Examiner finds the phrase "exciting the to cause" as being vague and indefinite. Claim 173 has been amended, and the subject phrase now reads "exciting the sample to cause." Claims 174-193 depend therefrom. In the telephonic interview, the Examiner acknowledged that the amendment to claim 173 overcame the rejection. Claim 173 is directed to the subject matter of claim 161, but written in independent form including all of the limitations of the base claim and any intervening claims, and the Examiner has found claim 161 to contain allowable subject matter. Accordingly, applicants respectfully request withdrawal of the is rejection.

Claims 128-130, 132, and 135-144 remain rejected under 35 U.S.C. § 103(a) as being obvious over Higuchi (BioTechnology, 10:413(1992) in view of Haff (BioTechniques, 10(1):102-112(1991)). The Examiner has reiterated this rejection, as raised in the previous office action. Claim 128 has been amended to incorporate the subject matter of dependent claim 133, that the means for heating the PCR sample is a forced air heater.

Claim 133 was not included in this rejection. Accordingly, Applicants respectfully request withdrawal of this rejection.

Claims 13-20, 23-25, 28-31, 128-132, 135-137, 140-143, 156-158, 160, 168-170, and 196 remain rejected under 35 U.S.C. § 103(a) in view of Haff (U.S. Patent No. 5,720,923). Claims 13-18, 20, 23-25, 28-31, 128-132, 135-137, 140-143, 157-158, and 160 have been amended. Claim 170 has been amended to depend from claim 55. Claims 19, 156, 168, and 196 have been cancelled.

Initially, applicants wish to clarify one issue. The Examiner is correct on page 6, lines 12-17 of the Office Action, where the Examiner maintains that Haff teaches positioning the sample in a monitoring position. In the prior Response of January 30, 2003, the applicants did not argue to the contrary. Instead, in the paragraph spanning pages 9-10 of the prior Response, applicants argued that Haff does not teach positioning the sample container in a monitoring position. This is an important distinction. In each and every embodiment of Haff, the sample container is stationary during amplification. In those embodiments of Haff that teach monitoring, the sample moves within the container to the monitoring position.

Claims 13-18, 20, 23-25, 28-31, 128-132, 135-137, 140-143, 157-158, 160, and 170 have all been amended to clarify this distinction. In each of these claims, a means is provided for moving multiple sample containers/holding means/sample vessels into a monitoring position. In most of these claims, the means for moving the sample containers is a rotatable carousel that moves the sample containers one by one to a monitoring position. The means for heating (illustratively a forced air heater) and means for cooling heat and cool all of the samples simultaneously. Claims 13-18, 20, 23-25, 28-31, 128-132, 135-137, 140-143, 157-158, and 160 all require a device that can move multiple sample containers into and out of a monitoring position and simultaneously heat and cool the samples contained therein, regardless of whether the sample container is in the monitoring position.

As mentioned above, each and every embodiment of Haff uses a sample vessel that is stationary during amplification. There is simply no suggestion in Haff to move the sample vessels. In most of the embodiments of Haff, the sample vessels are fixed to a portion of the device in such a way that it would be difficult or impossible to move the sample vessels into and out of a monitoring position, wherein each sample vessel is thermal cycled regardless of whether it is in a monitoring position. Haff simply fails to suggest the claimed invention. Further, with respect to claims 13-18, 20, 23-25, 28-31, 157-158, and 160, the teachings of Haff are simply inconsistent with the use of a rotatable carousel to move the

sample containers one by one to a monitoring position, wherein all of the samples are heated and cooled simultaneously. Applicants respectfully request withdrawal of this rejection.

Claims 13-25, 28-31, 33-35, 55-59, 128-137, 140-143, 145-146, 156-158, 160, 163-170, and 196 remain rejected under 35 U.S.C. § 103(a) over Haff (U.S. Patent No. 5,720,923) taken in view of Schregenberger (U.S. Patent No. 4,326,342). According to the Examiner, Schregenberger describes a multizone oven that includes many fans that produce a forced air or gas flow arrangement for temperature control.

Claims 13-18, 20, 22-25, 28-31, 33-35, 55-59, 128-132, 134-137, 140-143, 145-146, 157-158, 160, and 169-170 have been amended. Claims 19, 21, 133, 156, 163-168, and 196 have been cancelled.

As discussed above, the claims have been amended require a device that can move multiple sample containers into and out of a monitoring position and simultaneously heat and cool the samples contained therein, regardless of whether each sample container is in the monitoring position. Such an arrangement is not taught or suggested by Haff. The force air or gas flow of Schregenberger also fails to provide this teaching, and Schregenberger fails to bridge the gap between Haff and the presently claimed invention. Applicants respectfully request withdrawal of this rejection.

Claims 13-35, 55-59, 79-82, 87-90, 118-125, 128-148, 151, 156-158, 160, 163-170, and 196 remain rejected under 35 U.S.C. § 103(a) over Haff (U.S. Patent No. 5,720,923) taken in view of Schregenberger (U.S. Patent No. 4,326,342) and Jordan (U.S. Patent No. 4,325,910). According to the Examiner, Jordan teaches various detection set ups for light signals from sample analysis. The Examiner notes that the device of Jordan is depicted in various figures as being a rotary or carousel device.

Claims 13-18, 20, 22-35, 55-59, 79-82, 87-90, 118-125, 128-132, 134-148, 151, 157-158, 160, and 169-170 have been amended. Claims 19, 21, 133, 156, 163-168, and 196 have been cancelled.

As discussed above, the claims have been amended require a device that can move multiple sample containers into and out of a monitoring position and simultaneously heat and cool the samples contained therein, regardless of whether each sample container is in the monitoring position. Such an arrangement is not taught or suggested by Haff, and, as discussed above, due to the stationary arrangement of the Haff devices. The force air or gas flow of Schregenberger also fails to provide this teaching. While Jordan teaches a rotatable carousel, such is inconsistent with the stationary embodiments of Haff. In particular, the embodiments of Haff, as shown in Figs. 1-4 and 12-30 have sample vessels wherein the ends

are fixed to the device. Similarly, it is unclear how a rotatable carousel could be combined with the embodiment of Figs. 5-10. It is simply unclear how the sample vessels of Haff could be loaded into a rotatable carousel and moved into a monitoring position. Furthermore, while the samples of Jordan are loaded into the carousel with the respective reagents, and the samples are moved to monitoring devices, Jordan does not teach or suggest thermal cycling the samples. In fact, Jordan teaches away from thermal cycling on col. 18, lines 18-25, where Jordan teaches maintaining the samples at a selected temperature. Thus, neither Schregenberger nor Jordan, alone or combined, bridge the gap between Haff and the presently claimed invention. Accordingly, applicants respectfully request withdrawal of this rejection.

Claims 13-35, 55-59, 79-82, 87-92, 118-158, 160, 163-170, and 196 remain rejected under 35 U.S.C. § 103(a) over Haff (U.S. Patent No. 5,720,923) taken in view of Schregenberger (U.S. Patent No. 4,326,342), Jordan (U.S. Patent No. 4,325,910), and Schembri (U.S. Patent No. 5,472,603). According to the Examiner, Schembri describes an analytical rotor that may be used in a wide varied of biological material analyses.

Claims 13-18, 20, 22-35, 55-59, 79-80, 82, 87-90, 121-132, 134-155, 157-158, 160 and 169-170 have been amended. Claims 19, 21, 81, 118-120, 133, 156, 163-168, and 196 have been cancelled.

As discussed above, the claims have been amended require a device that can move multiple sample containers into and out of a monitoring position and simultaneously heat and cool the samples contained therein, regardless of whether each sample container is in the monitoring position. Such an arrangement is not taught or suggested by Haff, and, as discussed above, due to the stationary arrangement of the Haff devices, such an arrangement is inconsistent with the teachings of Haff. The force air or gas flow of Schregenberger does not provide this teaching. While Jordan teaches a rotatable carousel, such is inconsistent with the stationary embodiments of Haff. The rotor of Schembri, if used to move sample containers into and out of a monitoring position, is similarly inconsistent with the stationary embodiments of Haff. Thus, the combination of Haff, Schregenberger, Jordan, and Schembri does not suggest the presently claimed invention. Accordingly, applicants respectfully request withdrawal of this rejection.